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Designing Reflective Practice in the Context of OER-based e-Learning

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Abstract: Much is said about the importance of reflective practice especially in the professions. Yet much of what happens as part of reflective practice in the professions such as teaching is most of the time left to chance. Reflective practice allows practitioners to see the link between theory and practice by thoughtfully considering their own experiences, and applying knowledge to practice. In this paper we argue that for reflective practice to be meaningful and useful to professionals, it should be carefully designed with appropriate structure and guidance. We discuss how this was achieved by being pro-active about promoting and nurturing reflective practice within the context of a professional development program with Sri Lankan educators on OER (Open Educational Resources)-based e-Learning, and how it supported fostering Open Educational Practices (OEP). The OER-integrated online learning experience was designed with various strategies adopted to enhance reflection 'in' and 'on' action, within a situated learning pedagogical design – Scenario-based learning (SBL). Content analysis of the qualitative data mainly gathered through participants' self-reflections, supplemented with course team members' reflections, focus group interviews and the open-ended questions in questionnaire surveys, revealed that a scenario-based approach to learning incorporating authentic learning activities and assessment tasks, such as concept mapping, online discussions, reflective journal writing, and rubric-based feedback on assessment tasks, all helped scaffold participants' approach to reflective practice. Results show that these strategies that were adopted enhanced their critical thinking, creativity, and collaborative learning as well as self-esteem, also indicating a shift towards OEP. We conclude that careful design of the learning experiences is critical in promoting and supporting reflective practice among educators, and the use of such strategies in the design of OER-based e-Learning

Keywords: Reflective Practice; OER-based e-Learning, Scenario-based Learning, Open Educational Practices.

Introduction

The significance of reflection and reflective practice in professional development is a much-discussed subject. Reflection allows professionals to monitor and self-regulate their practices by thoughtfully considering their own actions and experiences, seeing the link between theory and practice and applying such knowledge to practice. As such, reflective practice is a key to progressive development of professionals that enables them to become reflective practitioners. Yet, much of what happens as part of reflective practice in the professions such as teaching is most of the time left to chance. In this paper we argue that for reflective practice to be meaningful and useful to professionals, it should be carefully designed with appropriate structure and guidance. We discuss how this was achieved by being pro-active about promoting and nurturing reflective practice within the context of a

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professional development program with Sri Lankan educators on OER (Open Educational Resources)-based e-Learning, and how it supported fostering Open Educational Practices (OEP).

Conceptual Framework

Reflective Practice in Professional Development

Reflection is a form of mental process, thinking about what we have done, learned and experienced, which is used to fulfil a purpose or to achieve some anticipated outcome (Moon, 1999; 2005). Reflective practice becomes a key strategy for self-improvement in a professional setting, as it involves critical self-analysis in which individuals thoughtfully consider their own experiences in applying knowledge to practice (Schön, 1983; 1987). Hence, it is a very productive process leading to great self-awareness in individuals by identifying practices that have worked well, as well as areas for improvement, as a step towards positive changes in their practices, both in personal and professional contexts.

A number of models on reflective practice that have been presented over the years attempt to explain how theory is linked to practice through reflection. For instance, the Experiential Learning Theory (Kolb, 1984) illustrates an iterative cycle of four stages— concrete experience; reflection; abstract conceptualisation; and active experimentation. According to this model, learning occurs moving between active and reflective modes, emphasizing the significance of reflecting upon the experience for learning to happen.

Similarly, the 'Learning by Doing' model (Gibbs, 1988) provides some key points in development, especially description, evaluation, analysis and action. It requires practitioners to provide a clear description of the situation, analysis of feelings, evaluation of the experience, analysis to make sense of the experience, conclusion where other options are considered, and reflection upon the experience to examine what you would do if the situation arose again. This model encourages the use of critical reflection in converting new learning and knowledge into action and change.

Critical reflection takes place when we analyze and test the justification of 'taken-for-granted' premises and challenge the validity of our presuppositions (Mezirow, 1990). It is a process of questioning our feelings, beliefs, values, and behaviors in order to justify our actions and describe why we do things the way we do, and what other differing views or behaviors might be there. This process would help practitioners to develop a rationale for their practices and to make informed decisions in their contexts. Such reflective action, based on critical assessment of assumptions underlying their beliefs and behaviors, becomes an integral element in decision-making (Mezirow, 1990).

The significance of reflective practice in the teaching profession has been widely discussed and well researched. While reflection is a form of mental processing that is used to fulfil a purpose, reflective learning emphasizes the intention to learn from current or prior experience (Moon, 2013). Through a reflective practice process the insights and learning gained through experiences can be used by the practitioners to continuously learn, grow and develop in and through practice. The notions of 'reflection-in-action', and 'reflection-on-action' (Schön, 1983) allows practitioners to engage in a process of continuous learning through critical reflection.

Reflection 'in' Action and Reflection 'on' Action

Donald Schön's (1983) model focuses on reflective practice as a means for professional growth and on the role of the reflective practitioners in terms of two aspects — learning to reflect 'in' action (RIA) and reflect 'on' action (ROA) (Munby, 2012). RIA is 'thinking on your feet' or reflecting while engaging in an action, and ROA is 'looking back' or reflecting after the completion of an action or an experience (Schön, 1983).

RIA allows practitioners to constantly be aware and monitor one's own actions and make changes as required during the experience itself, while generating new understandings of the situation. However, this will be triggered with a 'surprise':

> The practitioner allows himself to experience surprise, puzzlement, or confusion in a situation which he finds uncertain or unique. He reflects on the phenomenon before him, and on the prior understandings which have been implicit in his behaviour. (Schön, 1983, p. 68)

The experience of encountering a phenomenon where the practitioner allows him/herself to feel "surprise, puzzlement, or confusion", and reflect on this feeling and what caused it, will enable him/her to further explore the situation and appropriately act upon it instantly.

ROA, on the other hand, is a post-action reflection where a professional looks back on past events and generates new understandings on his/her actions.

> We reflect on action, thinking back on what we have done in order to discover how our knowing-in-action may have contributed to an unexpected outcome (Schön, 1983, p. 26).

ROA involves critically analyzing and evaluating the experience that had occurred, reflecting on how this practice can be further developed or changed after the event. This allows and will help practitioners to plan and improve their next course of action based on their critical reflection.

These two notions, RIA and ROA, are complementary in having a clear link or relationship between them, and together they play a significant role in improving teaching-learning practices. This provides a useful framework to plan strategies to support reflective practice in professions (Munby, 2012). The Reflection *in* Action and Reflection *on* Action framework (Schön, 1983) provided guidance in the development of a professional development course on OER-based e-Learning at OUSL, for practitioners in the higher education setting, where the learning experiences were carefully designed in a structured manner, including specific strategies to support reflective practice among them.

A Scenario-Based Pedagogical Approach to Support Reflective Practice

Scenario-based Learning (SBL) is a model of situated learning that is grounded in constructivist pedagogy (Duffy & Jonnasen, 1991). The concept of situated learning involves immersing learners in authentic and real world learning experiences to provide them with opportunities to engage in meaningful learning activities (Brown, Collins & Duguid, 1989). Situating learners in such meaningful and authentic learning contexts has the potential to enhance effective, efficient and engaging learning (Naidu, 2010).

In an SBL environment, learners are placed in an authentic learning scenario that takes the form of a storyline embedded in a real life context in which learners are required to assume a key role to achieve a goal (Schank & Cleary, 1995; Schank, Fano, Jona & Bell, 1994). SBL thus provides a meaningful learning context, where learners face various challenges in the form of learning activities

and assessment tasks within the learning scenario. In addressing these challenges, learners will be able to accomplish the intended learning outcomes and demonstrate the desired competencies (Naidu, 2006). SBL design promotes a learning-centred approach, shifting from a content-focus to a context-focus. It has been successfully adopted in a practitioner-oriented professional development programme for teacher educators – MATE-I, which has proven SBL to be a very effective approach in making reflective practitioners (Naidu, Menon Gunawardena, Lekamge & Karunanayaka, 2005). Similarly, a number of case studies illustrate how SBL can be deployed to prepare graduates of various disciplines to their professions, in a variety of contexts (Errington, 2010).

Use of an SBL approach in an online environment makes online learning more interesting, allowing learners to actively participate in finding solutions to real-world problems, and to meaningfully apply their knowledge (Chu, 2007; Karunanayaka & Naidu, 2009; Mery & Blakiston, 2010). However, design and development of rich and resourceful authentic learning scenarios and using them to orchestrate appropriate online learning experiences to engender reflective practice is a complex task, which requires careful thinking and meticulous planning (Naidu, Menon Gunawardena, Lekamge & Karunanayaka, 2007).

Further, design, development and implementation of OER-based e-learning courses using the SBL approach was found to be a very challenging, yet a rewarding experience for educators, making them reflective practitioners (Karunanayaka, 2014; Karunanayaka & Naidu, 2014). An innovative approach to learning experience design, a 'learning engine' framework provided a useful strategy for effective, efficient and engaging OER-integrated e-learning based on SBL pedagogical design (Fig. 1) (see details at Naidu & Karunanayaka, 2014).

Even though designing such meaningful learning experiences is a very challenging process, when executed well, SBL design has the potential to promote reflective practice, supporting both reflection 'in' and 'on' action.

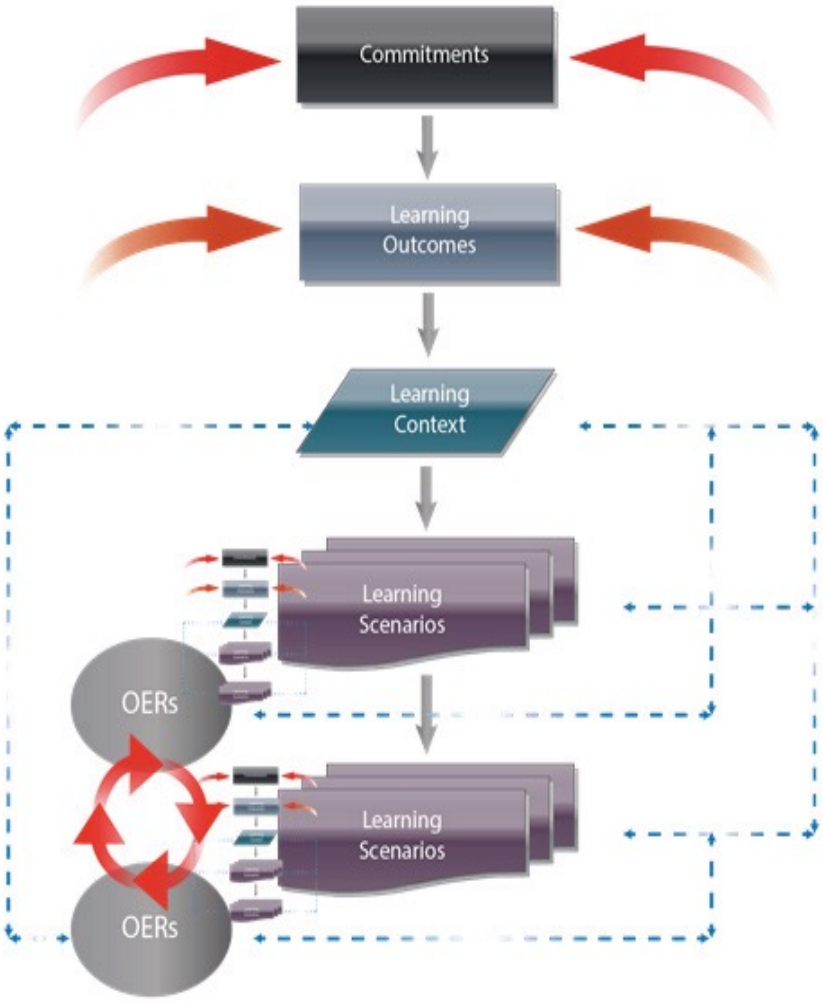

Figure 1: The Learning Engine Framework (*Source:* Naidu & Karunanayaka, 2014, p. 8)

Design and Development of the OER-based e-Learning Online Course

The OER-based e-Learning (OEReL) developed at OUSL is an adaptation of a fully online professional development course of the Commonwealth Educational Media Centre for Asia (CEMCA). This course was developed based on the SBL pedagogical design (Naidu, 2010), integrating the 'learning engine' framework (Naidu & Karunanayaka, 2014) and the 'OPAL' framework (Ehlers, 2011).

A carefully orchestrated series of online learning experiences based on the SBL approach, together with different levels of OER integration at different levels, horizontally – in learning experiences within each module — and vertically, across the five modules, supported practitioners in moving from OER to OEP (Fig. 2) (see Karunanayaka, Naidu, Rajendra & Ratnayake, 2015 for details).

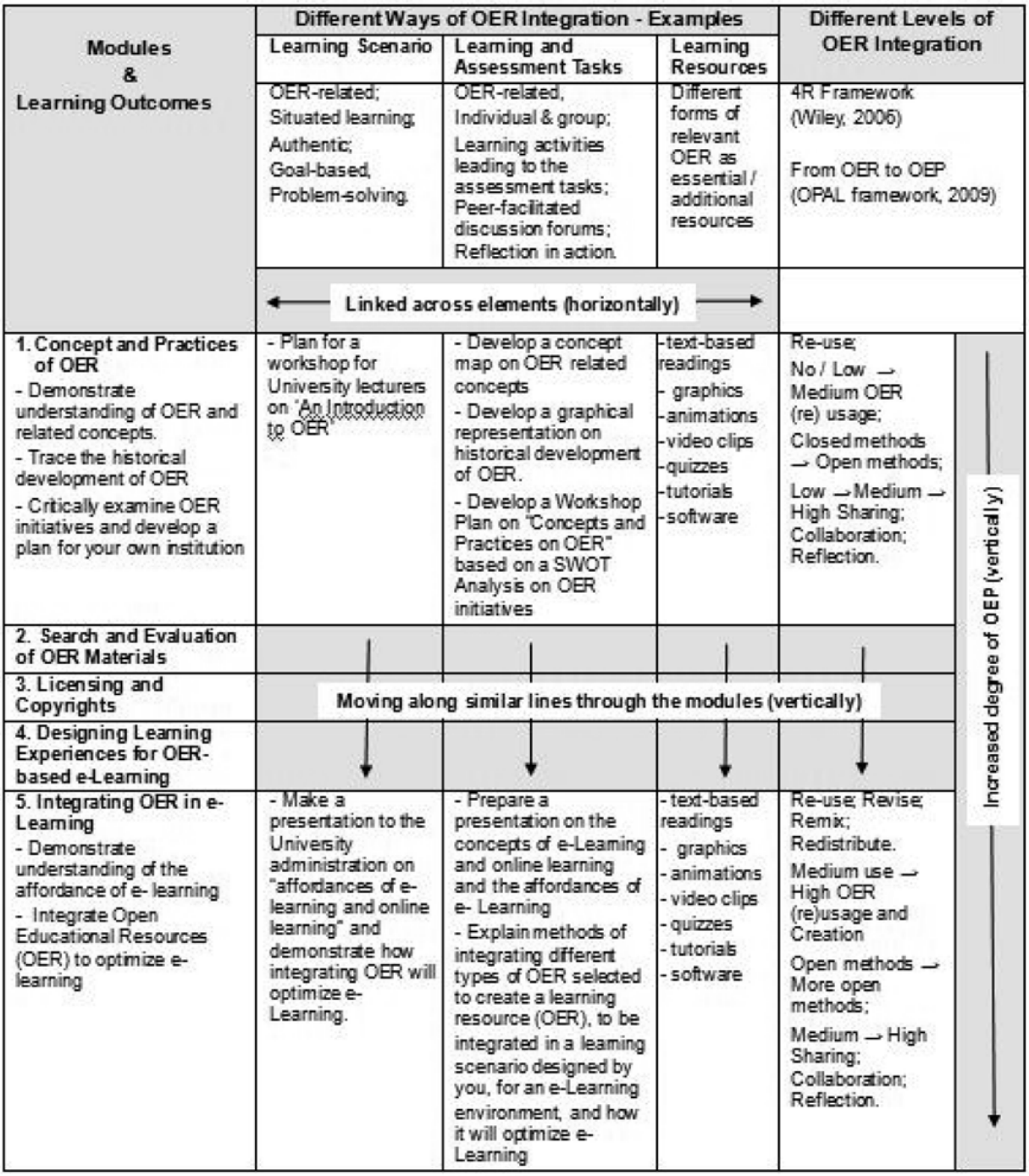

Figure 2: Matrix of OER-integration among five modules of the OEReL course

(*Source:* Karunanayaka, Naidu, Rajendra, & Ratnayake, 2015, p. 343)

The learning design included an authentic learning scenario in each module that challenged participants to engage in learning activities leading to assessment tasks with the support of learning resources. Each assignment consisted of three sections: an individual task; a group discussion forum; and a self-reflection. The participants were provided clear guidelines to write a short reflection on their learning experience, as shown in Fig. 3. In addition, an assessment rubric used to assess and provide feedback to their reflections (Fig. 4) was also shared with the participants.

Guidelines to write Self-Reflections

As an assessment requirement, you need to write short reflections at the end of each of the stages of your learning process.

Reflection allows us to learn from our experiences leading to greater self-awareness. The aim of reflection is to identify areas that need improvement, and identify approaches that worked well to reinforce good practice.

After completing each stage, recall the learning/assessment activities you were engaged in.

Make self-critical notes on your feelings, ideas, successes/failures and problems that may have arisen, related to each activity

Write a short reflection (a single page) focusing on the following:

- Analysing the importance of the activity/activities
- How this experience has affected you/others?
- What were the issues arisen and how those were overcome?
- What were the successes/failures?
- What impact this experience had had on you?
- Could you have done certain things in a different manner, and If so, how?

Your reflective notes are your own ideas. The important thing is to write your reflections clearly and meaningfully.

Figure 3: Guidelines provided for participants to write self-reflections

(b) Reflecti on	**4. Reflecting on the learning experience:** (i) Critical self-analysis (ii) Challenges (iii) Successes/ Failures (iv) Impacts (v) Future improvements	Experience gained during the task are critically analysed appropriately and clearly addressing all 5 elements	Experience gained during the task are critically analysed appropriately and clearly addressing at least 4 elements	Experience gained during the task are critically analysed appropriately and clearly addressing at least 3 elements	Experience gained during the task are analysed, addressing at least 2 elements	Experience gained during the task are analysed, addressing only 1 element.

Figure 4: Assessment rubric used for self-reflections

Within the learning experiences designed in each of the modules, the participants were given various opportunities to reflect 'in' action and reflect 'on' action (Schön, 1983). Table 1 provides a summary of different aspects of the course design adopted to facilitate and promote reflective practice among participants during their learning process.

Table 1: Strategies adopted in the course design to facilitate reflective practice

Reflective Practice	Reflection in Action (RIA) →				Reflection on Action (ROA) →	
Strategy	Learning Scenarios	Learning Activities (Individual task)	Learning Activities (Group discussion forum)	Final Assignments (Individual)	Self-Reflections (Individual)	Feedback/ Assessment Rubric (Individual/ Group)
Details	Learners situated in authentic challenging scenarios	Engaging with new concepts, with the support of learning resources	Sharing draft work for critical, constructive peer feedback	Improving draft work and submit finalized assignment.	Writing self-reflective notes on the learning experience	Planning for the future

A description of a learning experience in one module is presented in Table 2 as an example to illustrate how different strategies were employed within the SBL pedagogical design to support reflective practice.

Table 2: An Example of Learning Scenario, Learning Activities and Assessment Tasks

Learning Scenario	Learning Activities & Assessment Tasks (Part 1)	Reflective Practice
The use of Open Educational Resources (OER) is being adopted by numerous institutions, governments and the private sector. As part of its service to the academic community, your university will be running a workshop entitled 'An Introduction to OER' for lecturers involved in tertiary education. The main objective of this workshop is to provide participants an understanding of the basics of OER so that they can in turn run a workshop for their respective institutions in the following areas: Openness in education Historical development of open educational practices; OER initiatives by institutions and governments **Your Goal:** You have been asked to lead a team of academics to prepare a plan/ blueprint for the workshop as well as identify and collate all the necessary resources to support the workshop.	List one key concept related to 'openness in education' and at least three other concepts related to your key concept. Link the key and related concepts, with labeled arrows, and explain their relationship.	RIA
	Post the draft of your key and related concepts to the discussion forum; respond to the posts of at least two of your peers, with insights on their understandings of key and related concepts, and suggestions on how they might be improved	RIA ROA
	Based on peer feedback and tutor comments, develop your Concept Map covering all the concepts required, and write a description that explains your concept map.	RIA ROA
	Submit the finalized concept map covering all the concepts required, together with a description that explains your concept map and a short reflection on this process,	ROA

As shown in the above example, the SBL design initially situated the participants in a challenging situation in an authentic learning scenario where they were activated with a goal to achieve. This made it mandatory for them to reflect 'in' action in order to move forward– analyze the prevailing 'puzzling' or 'confusing' phenomenon based on their prior experiences, and also to think ahead about

the actions required by them to face this challenge. Further, there was a sequence of learning activities that emerged from the scenario leading to the assessment tasks. These supported participants to reflect 'ín' while 'experimenting' with their actions, reviewing, revising and 'changing' their work, while developing 'new understandings' during the process. These tasks also allowed the participants to reflect 'on' their actions - to think back at the end of each of the activities, reflecting once each task was completed, and plan for future actions, based on what was learnt through the reflections

Methodology

Research Design

The aim of this study was to explore how a systematic design of reflective practice within the context of a professional development online course on how OER-based e-Learning, impacted promoting, supported reflective practice among educators and fostered their adoption of OEP. A case-study approach, which is an in-depth investigation of a single unit of study through examining the first-hand experiences of individuals in a real life context (Bogdan & Biklen, 1998; Yin, 2003), was adopted as the research design.

Research Questions

The following research questions were addressed in the case study:

- What is the effect of the scenario-based learning pedagogical design in promoting reflective practice among educators?
- How and to what extent do the strategies adopted within the course design enhance reflection 'in' action and reflection 'on' action?
- What challenges were faced by the educators in their reflective practice process?
- What are the impacts on educators of the learning experience design integrated with reflective practice?

Participants

A group of 35 educators at the Open University of Sri Lanka (OUSL) constituting 18 females (51%) and 17 males (49%) who enrolled in the OEReL course, were the participants of the study. Table 3 presents a summary of the participant profile.

Table 3: Participant Profile

Category		Number	Percentage %
Gender	Female	18	51.4
	Male	17	48.6
Highest Educational Qualifications	PhD/MPhil	16	45.7
	Masters/PG Diploma	10	28.6
	First Degree	09	25.7
Experience as an educator in the Higher Education System	> 20 yrs	07	20.0
	11-15 yrs	06	17.2
	< 10 yrs	22	62.8

While a majority of the participants (62.8%) had less than 10 years of experience in the higher education system, they were well-qualified academics with either PhDs or MPhils (45.7%) and with other post-graduate qualifications (28.6%). Yet, the number of active participants gradually decreased during the course of study and finally only 10 academics (29%) successfully completed all five modules in the course.

Collection and Analysis of Data

The key data collection strategy adopted for this study was participants' self-reflections written at the end of each learning experience. This was supplemented with course team members' reflections, focus group interviews and the open-ended questions in learning experience questionnaire surveys. A simple coding system developed based on the conceptual framework of reflection 'in' action and reflection 'on' action (Schon, 1983), was adopted for the content analysis of qualitative data, as show in Table 4.

Table 4: Coding system adopted for the content analysis of qualitative data

Reflection in Action (RIA)		**Reflection on Action (ROA)**	
Element	Code	Element	Code
Puzzling	[P]	**An**alyzing	[AN]
Experimenting	[E]	**Ch**allenges	[CH]
Reviewing; **R**evising	[R]	**Im**pacts	[IM]
New understandings	[N]	**Ap**plication	[AP]

Chunks of reflective statements obtained from the qualitative data were considered as 'units of analyses'. After an initial analysis on RIA and ROA based on this coding system, a detailed analysis was conducted to identify specific strategies supported, challenges faced, and impacts related to the reflective practice process.

Results and Discussion

What is the effect of the scenario-based pedagogical design in promoting reflective practice among educators?

The course team members' and the participants' reflections were analyzed to find out the effect of SBL design in promoting reflective practice. Some sample quotes are provided in Table 5.

As evident by the above quotes, the SBL pedagogical design had supported integration of strategies to promote reflective practice, supporting both RIA [P,E,R,N] and ROA [AN,CH,IM,AP] among the participants. Situating them in an authentic 'scenario' with a challenge compelled participants to reflect 'in' action – to analyze the prevailing situation while experiencing it, and think ahead about the actions required by them, based on their prior experiences.

Table 5: Sample quotes on the effect of the SBL design on reflective practice

Quote from a course team member's reflections: … This is the first time that I was involved in designing SBL for facilitating learning…It gave me an opportunity to realize when designing SBL how important that one should look into the learning outcomes and identify what the students should achieve on completion, and then how one should structure the scenario…trigger discussion and…drive into collaborative learning...I noticed…that students were very constructive and open in writing their reflection for each assignment…I strongly believe that when students reflects on their assignments they might have found their gaps and would have helped them to rectify when writing the next assignment…
Quote from a participant's reflections: I really liked the SBL design…This was something new to me. [AN]…Each module was contextualized and situated in an authentic setting with tasks requiring us to engage in a number of activities which centered on designing an OER based- e-learning course in our related field. [P]…The real life activities such as writing the learning outcomes, developing the learning scenarios and the activities as well as designing the assessment tasks to fit the learning outcomes were challenging yet motivating. [E] [R] [CH]… The experience I gained from engaging in these tasks was invaluable. [N] [IM]…I have since given greater attention to ensuring that the assessment tasks I select are in keeping with the learning outcomes…[AP]

Further, the sequence of learning activities that emerged from the scenario also motivated participants to reflect 'ín' while experimenting with their actions, reviewing and revising their work and developing new understandings during the process, and leading to the completion of assessment tasks. These also supported them to reflect 'on' their actions – to think through each of the activities and reflect once the assessment tasks were completed, and plan for future actions, as evident by following quotes:

> By doing this assignment, I learnt a lot! [N] At the beginning I didn't know about ABCD concept of writing LO. [P] By studying given reading materials, I was able to learn the meaning of each and how to use it meaningfully. [N] Writing LO is a major task for academics when writing course materials and also later on to publish these materials as OER. Though I write many course materials...I didn't do it with the correct understanding. By doing this assignment, I gained that skill… [E] [R] At the beginning...I had many doubts while trying to understand how to write efficient LO. [CH] As always, discussion forum helped me a lot to clear my doubts as well as learn with understanding. [AN] We got enough reading materials to upgrade our knowledge. Now I have a good confidence to write LO for a given course or a session. Thank you so much again!! [IM][AP]
>
> It motivated me to involve in this study as it is an authentic one and felt that I am a part of it, in making the OUSL OER policy. [AN] Reading resources found in this section was helpful to a certain extent, however in order to gather more information, I had to read some more web resources, particularly on OER policies related to other universities. [P] [CH] The draft OUSL OER policy document posted…became a very 'live' document in organising the answer related to this assignment…[E] [R] [AN] I am glad, at least this assignment gave me a chance to contribute our thoughts related to OER policy, whether those recommendations are forwarded/ considered or not. [IM][AP]
>
> This is an interesting module because it gave me endless exploration through global knowledge base to find the exact meaning of such terms like e-learning, online learning and affordance of e-learning used in the learning activity. [E] [N] I have a challenge to find acceptable definition and understand the

concept behind such terms. [CH]…Based on the literature and learning resource provided, I successfully overcome this issue because it gave me some encouragement and put me in the correct tract as I understand [N] [AN]…In future, I am expecting to deliver the courses in OER-based with the help these concepts. [IM][AP]

The SBL design allowed the immersion of participants in real-life, challenging situations that prompted RIA. Further, the learning scenario started with a precipitating event that 'triggered' them to engage in a sequence of activities to address the problem (Naidu, 2010) which also necessitated RIA in each step to move forward, as well as ROA at the culmination, to make use of that experience for the future. The 'learning engine' framework (Naidu & Karunanayaka, 2014) adopted to develop such learning experiences within the SBL approach was very accommodating to design, and integrated specific strategies in a structured manner to promote RIA and ROA among the participants.

How and to what extent the strategies adopted within the course design enhanced reflection 'in' and reflection 'on' action?

Participants' feedback on specific strategies used in each module revealed how and to what extent the different strategies have affected their reflective practices. Some examples are given below:

Concept Mapping (Module 1):

When I start to draw my Concept map on Openness in Education, I was not aware of any concepts related to the topic.[P]…I got a paper and drew the concept map providing the relationships one by one. At the beginning it was a total mess. I drew again and again.[E]…Then I started to go through my group members maps and tried to comment on them.[R]…The exercise enlightened me on Focal concepts, the relationships, benefits, impacts.[N]…After completing the map, I realized that I missed to add several examples and also some pictures.[AN] More reading would help me to do a better job…in future…[AP]

Searching for different types of OER Materials (Module 2):

I never knew that there were such opportunities in OER based e-learning [P]. This particular assignment provided me an opportunity to learn on search engines, advanced learning and OER repositories, what I have never experienced [E] [N]. Further I realized that a good video can teach many things which cannot explain by printed materials or F2F teaching [AN]. This would definitely impact on my online teaching methods in future… [IM] [AP]

Online quiz on licence types (Module 3) :

I tried the quiz before reading to check my prior knowledge of license types.[P] I found that while I had an idea of what the terms meant when it came to actually indicating the correct combinations I failed miserably. [E] Happily, after the readings I got just one type wrong [R] …that was an achievement. [IM]

It was interesting to note the patterns of reflective practice of both RIA [P, E, R, N] and ROA [AN, CH, IM, AP] within the strategies, as depicted by the coded quotes of participants. In particular, the discussion forum activities included in all modules played a key role in supporting the reflective learning of participants, as evident by the coded quotes given below:

…Even though the learning may look somewhat simple and small, the richness of information available within it could be much deeper and richer. [AN] The postings...in the discussion forum further emphasized this. [AN]…It is really an exhilarating experience. [AN][IM] Here I found different persons

> looking at things from different viewpoints and bringing out the richness in the lesson material. [AN][IM]
>
> I could not participate in discussions and post my assignments to get peer feedback. [CH]…However, I followed all the discussion posts, posted by others and got some valuable insights in drafting my assignment. [R][N] This is the beauty of online learning, having all discussions posts stored and can be retrieved even at a later stage. [AN]...I also felt the value of communication and collaboration in an e-learning situation which is crucial for meaningful learning. [IM]
>
> What I have learned from this learning experience is the value of "social presence" and the peer feedback - both by the peers and the facilitators.[AN] The motivation is very important to go forward! [IM]
>
> …Engaging in discussion forums helps us to realize that we do not learn in a vacuum; we construct knowledge by interacting with our peers. [AN] [IM]
>
> The best part of this is collaborative learning that takes place through the discussion with peers [AN] [IM]. It gives you lot of insight and allows you to refine your own work [N] [AN]. Earlier I had some doubts that when allowed collaborative learning whether you will be totally influenced by others and your own creative thoughts may not come to work [P] [CH]. But after start following the course I found that belief is not correct [E] [IM].

The peer-facilitated discussion forums were developed based on key design principles of eLearning (Salmon, 2000) that encouraged participants to collaboratively construct knowledge through social negotiation and self-regulation, and at the same time supporting reflective practice. These examples reveal that specific strategies included within the learning experience, such as concept mapping, quizzes, and online discussions, have all helped scaffold participants' approach to reflective practice.

What challenges were faced by the educators in the reflective practice process?

Despite the various strategies adopted attempting to encourage participants to continuously engage in reflective practice, numerous challenges have affected their reflecting process, as summarized in Table 6.

Time constraint was a common issue faced by all participants who were full time academics. Reflection essentially requires time to *think*, either 'on your feet' (RIA) as well as 'looking back' (ROA) (Schon, 1983). The novelty of the content (e.g., OER and related concepts), certain activities (e.g., Concept mapping, SWOT Analysis) as well as the need to critically review of each other's work and provide constructive criticisms in the forums, required substantial time. Hence, the time allocated to engage in multiple tasks, within the stipulated deadlines, was claimed as insufficient by the participants. The complex nature of the activities, which required mostly higher order cognitive skills, such as critical thinking, analytical thinking, reflective thinking and creativity increased the cognitive load (Sweller, 1988) of the participants. Even though peer-facilitated discussions played a key role in collaborative and reflective knowledge construction, an expectation of more instructor guidance and feedback was indicated by the participants.

Table 6: Key challenges faced by participants to engage in reflective practice

Challenges	Effects	Supportive Quotes
Novelty Self-learning	Doubts on understandings	For me, reading took a considerable amount of time… most of the information was new… …The learning started with a bit of confusion on the types and categories of OER materials… …I had to relearn many things afresh…
Time constraints	Inability to meet the deadlines	Managing the time was the biggest challenge to adhere to deadlines… Finding time was a challenge as I wanted to go through the materials first and carry out the research systematically referring all the resources…
Peer-facilitation vs. Instructor facilitation in the discussion forum	Expectation of more instructor feedback, rather than peer feedback.	Most of the knowledge construction was handled by peers… It would have been better if there were more interactions by the facilitators... …What I have learned from this learning experience is the value of providing clear instructions and providing timely and constructive feedback (both as peers and facilitators)…
Too many higher order thinking activities	Cognitive load	All activities require higher order thinking skills and need time to think…and articulate…I think the facilitators have underestimated the time required to carry out this type of higher order activity which needs time to read, think, analyse and reflect points…
Technical Problems	Problems with the LMS	I was very unhappy… while waiting in front of my computer for more than 4 hours…

What are the impacts of the learning experience design integrated with reflective practice, on educators?

Results show that the learning experiences designed within the modules have impacted on the participants in significant ways. A summary of impacts given from the learning experiences in different modules is presented in Table 7 with examples and supportive quotes from the participants.

A closer analysis of the participants' reflections revealed that their critical thinking, creativity, collaborative learning as well as self-esteem have been enhanced during the process. Further, it indicates a shift towards OEP, in the educational practices of the participants. For instance, integration of OER in different ways, at different levels in all activities in all modules of the OEReL course has supported participants in engaging in self-study and independent learning, as well as reflective learning (Karunanayaka et al., 2015). These activities have further enabled the developing of their competency in adopting OER in all 5Rs – Retain, Reuse, Revise, Remix, Redistribution (Wiley, 2014), as well as the creation of OER. On the other hand, group learning activities, especially the peer-facilitated discussions, enhanced collaborative learning practices involving shared knowledge construction among the participants, with the support of OER-integrated learning (Karunanayaka, Rajendra, Ratnayake, & Naidu, 2016).

Table 7: Impacts of the learning experience on educators

Learning Experience	Impacts	Supportive Quotes
Selection and categorization of OER (Module 2)	Collaborative learning; Critical thinking; Self-esteem	*…The categorization of OER aroused some doubts.* [P]... *After getting feedback from peers I was able to clarify the doubts.*[R]…*I've rearranged the types and found facts to justify the selection regarding the topic.* [E] [R]… *At the end of the assignment task my knowledge in OER came to a higher level.* [N] [IM]
Licensing (Module 3)	Critical thinking	*Previously, I thought that the two terms (copyright and licensing) were interchangeable.* [P] *However, now I realize the difference.* [N]… *I am very grateful for this enlightenment, since I thought that it was perfectly within my right to use material that was in the public domain without any copyright statement.* [N] [AN] *I now see that not only did I endanger my own reputation but that of the institution as well, and I am determined to make this known to others.* [IM][AP]
Writing Learning Outcomes (Module 4)	Critical thinking	*This assignment opened my eyes to look at the course in a holistic manner as well as to write learning outcomes more accurately.* [N]…*As a teacher the experience gained is invaluable.* [IM] *In future I will use this knowledge gained in writing learning outcomes.* [AP]
Designing an OER-integrated eLearning experience (Module 5)	Creativity Self-esteem	*This was a great opportunity to think on how to design an OER course to deliver it an effective manner online* [AN]…*This exercise gave us the chance to demonstrate our creativity* [IM] …*Not only it helps in selecting suitable OER but it also helped us in developing/creating our own homegrown OER*...[AP]

Such enhancements in innovative use and creation of OER and collaborative practices in the use of OER foster and promote Open Educational Practices (OEP) (Ehlers, 2011). Hence, the systematic design of reflective practice process in the OEReL course has fostered adoption of OEP among the participants, while supporting RIA and ROA.

Conclusions and Implications

The findings of this case study show that reflective practice among educators is enhanced by the adoption of a scenario-based approach to learning and teaching. The design of strategies such as concept mapping, online discussions, reflective journal writing, and rubric-based feedback on assessment tasks have all helped to scaffold participants' approach to reflective practice. These strategies have also helped enhance their critical thinking, creativity, collaborative learning as well as self-esteem, and helped promote a shift towards open education practices, despite the constraints of time. We are able to conclude that careful design of learning experiences is critical in promoting and supporting reflective practice among educators, and the use of such strategies in the design of OER-based e-Learning.

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